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The History of “Artificial Insemination” in Japan during 1890–1948: Issues concerning insemination and donor sperm

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One of the most socially significant advances of modern medicine is producing children through artificial insemination, which enables pregnancy by using a tube or catheter to inject sperm into the womb or vagina.

Artificial insemination is used when the male has a low sperm count (i.e., male infertility) or when sperm cannot successfully pass through the cervical canal and into the uterus due to an anti-sperm antibody (ASA) or for some other reason (female infertility).

In addition to heterosexual couples unable to conceive, people who want to have a baby but do not have a male partner, such as lesbian couples or single women, can also be impregnated by artificial insemination; however, this practice is not common in Japan.

Artificial insemination is commonly identified as AIH (artificial insemination with husband) when a spouse’s sperm is used and as AID (artificial insemination with donor) or DI if a donor’s sperm is used.

Unlike in vitro fertilization (IVF) or intracytoplasmic sperm injection (ICSI), artificial insemination is easy to perform. In Japan, overall statistics are not maintained on artificial insemination as an assisted reproductive technology (ART), but only for cases of AID performed at registered medical institutions.

Artificial insemination existed long before modern technology. John Hunter of Scotland performed the first successful recorded insemination in 1776. Long before its widespread application to human beings, artificial insemination was applied to livestock breeding, because it was easier to carry semen from male to female livestock than to carry the animals themselves. The sperm of superior livestock could be marketed at high prices.

More recently, various forms of advanced medical technology have been used to achieve pregnancy, including Roentgen rays in the 1940s for oviduct aeration inspection, ultra-sonographic image diagnostic equipment beginning in the 1960s, and the development and clinical application of medicines for hormonal supplementation, induction of ovulation, and curing deficiencies in the uterine–mucous membrane environment.

Although the techniques of artificial insemination are easy, actual practices (such as the method applied or whose sperm is used) can change greatly over time depending on social and cultural attitudes. In this paper, I will discuss the introduction of artificial insemination in Japan and a turning point in its development.

(1) The “new artificial way of pregnancy” (人工妊娠新術) in the Meiji (1868-1912) and Taisho (1912-1926) eras

The book, *the New Artificial Way of Pregnancy*, written by a German doctor, was translated into Japanese in 1891. Japan’s national isolation was abolished at the end of the Edo period, and the Meiji period marked the beginning of the modern state.



Picture1: *the New Artificial Way of Pregnancy*
National Diet Library

Around this time, artificial insemination was introduced into Japan, explained as “a method of impregnating by inserting semen into the womb by hand.” It was promoted in cases where an obstacle prevented the safe passage of sperm or as “a method of bearing a child even if a man and woman could not have sexual intercourse.”

(2) Sexual intercourse as a premise

Interestingly, the method of extracting sperm in those days was based on the premise of sexual intercourse between a man and a woman. It was a method of carrying out sexual intercourse, extracting sperm into a condom, which was often used in the practice of state-regulated prostitution in the past in Japan, and injecting the sperm into the womb with a pump.

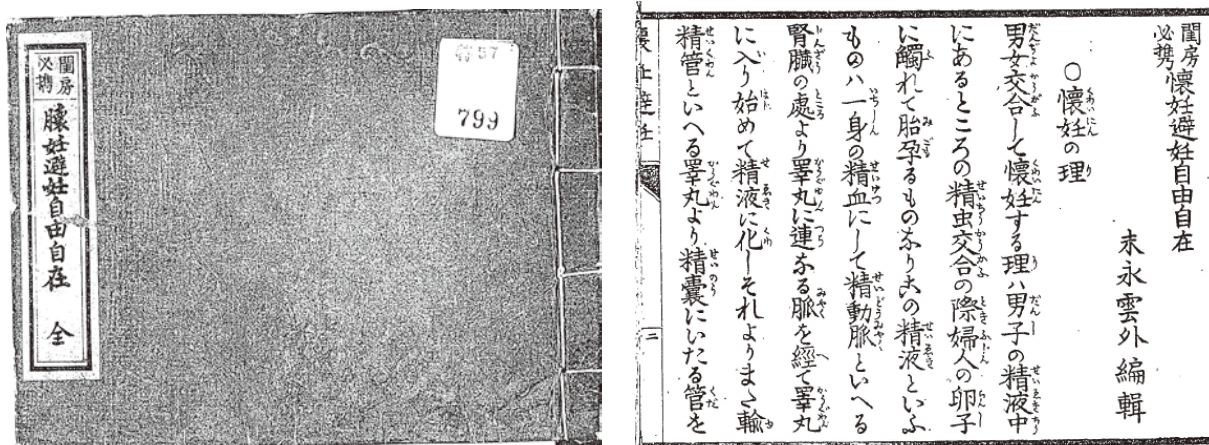
Gynecological Surgery Study 婦人科手術学, written in 1907 by the prominent Japanese doctor, Masakiyo Ogata, described the methods of sucking up semen from inside the vagina and extracting semen from a condom, both after sexual intercourse.

Today, this premise is not assumed at all. Before semen analysis, artificial insemination and in vitro fertilization, a male reaches ejaculation through masturbation. However, a woman may participate in assisting the man’s masturbation in a room of a house or a hospital. When there is an ejaculatory dysfunction, electric stimulus may be used to encourage ejaculation; when the male’s sperm count is low, extraction by paracentesis may be performed.

Why did the early Japanese practice of artificial insemination insist on collecting semen after sexual intercourse rather than through masturbation? Even much later, in a doctor’s paper published in 1952, it was stated that the man and woman perform sexual intercourse in one room of a hospital, with a doctor waiting to be called; after they have completed sexual intercourse, they call the doctor, who extracts the semen from inside the female vagina (Yui 2015, p. 150).

One might assume that this expectation was derived from a family norm according to which sexual intercourse between husband and wife was based on love and considered integral to childbearing. Notably, however, a literature review finds that extracting sperm through sexual intercourse was recommended to avoid the loss of energy that was associated with masturbation, according to classic works such as *Yojokun* 養生訓, Precepts for the Preservation of Health.

This view is consistent with the prevailing understanding of the cause of infertility during the Edo period (1603 to 1867). Although some developments in Western modern medicine, such as Dutch studies, reached Japan around the middle of the Edo period, Chinese and other Eastern forms of medicine provided the primary foundation for medical practice in Japan. It was presupposed that the cause of infertility derived from the lack of vital energy (血氣, 氣血 or blood and fluid, meaning of vitality,) and blood circulation in the human body. According to traditional Chinese medicine, male energy came from the kidneys, which supplied this energy to five viscera and six entrails. “Moderate sexual intercourse” was considered good, as it enabled not to lose vital energy and blood to flow from the kidneys. On the other hand, excessive self-indecency (手淫) and excessive intercourse (多淫, lasciviousness) were considered to cause loss of vital energy for the kidneys leading to male infertility.



Picture2: *Contraception or Pregnancy as One Pleases*, National Diet Library

For example, in a work on Hirano Sukezo said in 1880 (the 13th year of the Meiji period), *Contraception or Pregnancy as One Pleases* (懷妊避妊自在法), although the functioning of the male reproductive organ was explained by the anatomical principles of modern Western medicine, the problem of low male sexual energy was attributed to excessive self-indecency, which caused the element of semen to be lost and the body to have insufficient energy.

These claims that male infertility was due to too much masturbation and too much sex (手淫・多淫) decreased during the second half of the Meiji period. Instead, venereal disease came to be widely viewed as a cause of infertility. However, the “masturbation is harmful” theory remained dominant until the 1940s (Akagawa 1999).

One reason why many doctors did not view artificial insemination positively was likely the method of sperm extraction, which intruded closely into the private domain of a couple’s sexual relations. Doctors considered this activity as “seemingly … not medical treatment” and not as an appropriate part of a professional medical practice.

This observation is also connected with the next point to be discussed.

(3) The time lag: Artificial insemination by husband (AIH) versus artificial insemination by donor (AID)

In *The Methods of Making a Child* 子の有る法無い法, written in Meiji 41 (1908), Tayama Kasaburou described one successful example of insemination. Two decades later, Ohkubo and Asaoka reported that dozens of babies were born in “the knowledge of artificial pregnancy and contraception” (Ohkubo 1924) and “the reproductive physiology and medical treatment of infertility and the artificial pregnancy method” (Asaoka 1925). (But they might be natural pregnancy). Special editions on artificial pregnancy also appeared in women’s weekly magazines in the 1920s.



Picture3: *The Methods of Making a Child*, National Diet Library

In 1949, the first baby born as a result of artificial insemination by a donor (AID) in Japan (at Keio University Hospital) was officially announced, with an explicit statement that the child was born using “sperm other than those of a husband.”

Although “artificial pregnancy” was first tried during the Meiji era, only after World War II was sperm belonging to men other than the patient’s husband used. What caused this time lag? The New Artificial Way of Pregnancy, more than 50 years earlier, made no distinction as to whose sperm was used.

Probably, many people felt that having a child who lacked a direct genetic relationship to the parents was taboo. However, during those days, it was also common to adopt a child from relatives and acquaintances in Japan. There were also cases in which the child of a concubine was raised as one who would inherit the family’s estate.

In feudalism, having a child among two or more women—for example, both a wife and the nobleman’s mistress or concubine — was institutionalized. Also modern society, for the male of an upper class, there were children among two or more women as his status.

The translated version of *Medical Treatment of Gynecology* (校註婦人良方) (Chin陳自明) from the Chinese Song period “宗” (960–1279) contains the sentence, “There is a man who does not have a child even if he buys a maid and a concubine and they have sex.” The implication is that the method of determining “whether is there any sperm (seed) or there is nothing” (i.e., whether the male is the source of the fertility problem) was to have the man change women; if a child was still not born, then male infertility could be assumed.

It was quite obvious whether, if a microscope is used, there was “any insect of a sperm” (精虫) during the Meiji period. A woman is not so.

Moreover, when the woman was probably the source of the infertility, a common saying was, “Go away if a child is not born after three years of marriage.” If the woman was believed to be infertile, to determine if she should be divorced so that the man could have a child with another woman, the community authorized him to have sexual intercourse with the other woman. Unlike a male, the woman cannot have two or more husbands.

There was a form of marriage in Japan called “tentative marriage” (*Ashiire-kon*), in which formal marriage was not completed until it was confirmed that a child could be born to the woman. *Ashiire-kon* (tentative marriage) is the cultural institution for checking not only women’s ability as labor but also women’s ability as fertility before marriage.

It is also said that adoption frequently took place to ensure that there was someone to inherit and continue a family line (家). According to one source, 1% of the population in each village was adopted (Kazuo Ueno, 2nd edition of the World Large Encyclopedia 世界大百科 second edition). Therefore, the resistance to sperm donation was not because of any taboo regarding the lack of hereditary relation between parents and child.

The most likely reason why AID was not applied until 1948 is that doctors resisted it as an intervention for male infertility.

The only doctor at a clinic who arranges for AID, ova donation, surrogate birth (IVF between husband and wife) in Japan has indicated on the site, “Sperm donation is not considered an unchaste practice as it cannot be equated to adultery; when one considers it as adoption of the sperm, the sense of incongruity is lost.” In other words, doctors now see this practice as a donation, not as participating in adultery.

As for infidelity, until 1947, only the woman was judged as an offender under Japan’s criminal code. It

was considered improper conduct for a doctor to participate in helping a wife to have a child with a male other than her husband because it was viewed as assisting adultery.

Another reason could be connected to the modern family norm that presupposed a relationship between genetics, pregnancy, and childbirth.

Around the time of the birth of Japan's first AID baby, Dr. Kakuichi Ando, who practiced AID at Keio University Hospital and was a leader in artificial insemination of Japan, wrote that "since the husband and wife each contribute 50% of generative cells, this is seen as superior to adopting a child. But in the transfer of the generative cell, since there is no corporeal negotiation, AID does not spoil purity."

In those days, doctors, religious leaders, scientists, and ordinary citizens debated artificial insemination using sperm other than that of a husband. Although the practice is still controversial, now the most common criticism surrounds the child's rights to know his or her genetic roots, rather than the claim that the parents and child should have a hereditary relationship, specifically on the paternal side. It is interesting to note that there has been not only resistance to reproduction between non-spouses, but also other objections to artificial insemination.

"Artificial" is often interpreted as meaning "not natural." What is the connotation of "not natural" here? First, it could refer to the absence of love from the process of pregnancy, if the insemination does not result from sexual intercourse between loving partners. Second, the process by which a doctor in a consultation room uses a tube to inject semen into the womb is often perceived as "not natural."

Hospitals in Japan have started performing AID because the procedure is considered a therapeutic intervention for infertility. The focus has shifted from the possible infidelity of the women to the medical value of AID in spite of it being "not natural."

(4) Discussion

Reviewing the history of artificial insemination in Japan, we can see (a) a reduced stress on the importance of a particular extraction method, (b) a decline in the centrality of sexual intercourse to the process, and (c) increased importance of genetic relationships.

We can still observe resistance to "artificial" forms of reproduction even in modern society. In my survey, some persons expressed objections to artificial insemination or in vitro fertilization and resisted infertility treatment, even if it used the husband's sperm and the wife's eggs. Although among people with infertility experience the percentage of respondents who chose "would not use it even if my spouse wanted to" for AIH was only 6.4%, this percentage rose to 37.2% for those who had not experienced AIH and 45.5% for those who were unfamiliar with the treatment (Shirai 2008).

One woman who wanted to have a child underwent artificial insemination, but felt depressed after the procedure. She said, when interviewed, "I feel that artificial insemination is a form of breeding and that insemination of human beings oversteps a boundary" (Shirai 2012). Another woman reported that she was crying, "This must stop!" when she awoke from general anesthesia following egg retrieval (Shirai 2012).

It is strong in Japan to resist not only to infertility treatment but to the sterilization, enforcement rate of tubal ligation is 1.5% and that of a vasectomy is 0.4%, a condom is 40.7% (the averages in the world are 20.3%, 2.8%, and 6.1%).

Resistance in Japan is strong not only to medical procedures related to conception, but to medicine itself. The Japanese rate of contraceptive pill use is 1.0%, whereas the global average is 8.8% (United Nations, World Contraceptive Use 2009).

Similarly, as of 2007, epidural anesthesia was used in only 2.6% of deliveries in Japan, far less than the 61.0% of all vaginal deliveries in the United States (CDC2011)¹ and 16% in Singapore².

This wide variance in reproductive practices between countries reminds us that use of reproductive technology is located in the context of sociocultural practices and beliefs.

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¹ U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES, 2011
https://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59_05.pdf

² I myself have had my children by natural birth at a maternity home or my own home, without epidural anesthesia, a labor inducer, intravenous drip, shaving, an episiotomy, or an enema.